

Rec'd PCT/PTO 24 SEP 2004

CAP-136US

PATENT COOPERATION TREATY

10/509053

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT023	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/AT 02/00202	International filing date (day/month/year) 28.03.2002	Priority date (day/month/year) 28.03.2002
International Patent Classification (IPC) or both national classification and IPC F16M11/32		
Applicant LINO MANFROTTO + CO. S.P.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 06.10.2003	Date of completion of this report 28.06.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Rochus, J Telephone No. +49 89 2399-8913 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT 02/00202

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

2-6 as originally filed
1 received on 29.04.2004 with letter of 29.04.2004

Claims, Numbers

1-12 received on 29.04.2004 with letter of 29.04.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT 02/00202

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	1-12
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IT 02/00202

1. Claim 1 describes a support comprising a pillar arranged to receive an apparatus at a first end on an orientable platform and to be housed with its stem in a seat in a spider of a tripod. The pillar is structurally independent of the spider, capable of being inserted removably in the seat and slidable therein. The platform comprises a ball and socket joint including a ball and a socket fixed firmly to a fixing platform for the apparatus and to said stem of the pillar, respectively, or vice versa, as in US 2 168 988 A. The support furthermore comprises a tie rod acting between the socket and the ball to prevent relative rotation thereof when tensioned.

Claim 1 differs therefrom by another arrangement of the tie rod, viz. it extends through the stem of the pillar and is operated by means of a knob associated with the second end of the pillar, remote from the first end.

This is novel and industrial applicable and contains an inventive step as none of the cited documents gives a suggestion to provide said differing tie rod.

2. The dependent claims 2 - 9 include advantageous embodiments of the support according to claim 1 and thus also fulfil the requirements raised.
3. Claim 10 describes a tripod including such a support and locking means between the spider and the pillar.

Claim 10 and claims 11 - 12 dependent thereon include advantageous embodiments of the support according to claim 1 and thus also fulfil the requirements raised.

4. Claim 1 is not correctly delimited against US 2 168 988 presenting the nearest prior art, Rule 6.3 (b)(i) PCT.

Support for apparatus in general and, in particular, for optical or photographic apparatus and the like.

Technical field

The subject of the present invention is a support for apparatus in general and, in particular, for optical or photographic apparatus and the like, of the type described in the preamble to the main claim.

Technological background

Supports including the above-mentioned characteristics are used widely in the photographic and cinematographic fields, generally in association with tripods or stands for the orientable support of cameras. In this field, a need arises to position the stand or tripod with a pillar support mounted thereon and to be able to orient the apparatus mounted on the support about its own axis. This need arises typically in so-called panoramic shots.

In this situation, it is necessary to position the tripod with care so that the rotation of the pillar takes place whilst the desired state of levelness of the camera is maintained.

Cinematographic tripods and stands are also known, in which, to avoid the need for levelness, supports are used which have orientable platforms on which the head that supports the optical or photographic apparatus is mounted in turn. However, these supports require rack drives which interfere with the freedom of positioning of the pillar. Moreover, they are wholly unsuitable for applications in which the pillar can be moved to two or more positions on the tripod.

Supports for apparatus having the features outlined in the preamble of the main claim are disclosed in US 3128982 and in US 2168988.

Description of the invention

The main aim of the invention is to provide a support which can be mounted on tripods of conventional design and which at the same time affords all

CLAIMS

1. A support for apparatus in general and, in particular, for optical or photographic apparatus and the like, comprising a pillar (12) arranged to receive the apparatus at a first end and to be housed with its stem (11) in a seat (4) extending through a spider (3) of a tripod (4), the support comprising, at the first end, an orientable platform (14) for the levelling of the apparatus independently of the positioning of the tripod (1), the pillar (12) being structurally independent of the spider (3), capable of being inserted removably in the seat (4) and being slidable therein, characterized in that the orientable platform (14) comprises a first ball and socket joint including a ball (16) and a socket (15) fixed firmly to a fixing plate (17) of the platform and to the stem (11) of the pillar, respectively, or vice versa, and a tie rod (23) acting between the socket (15) and the ball (16) in order, when tensioned, to prevent relative rotation thereof, said tie rod (23) extending through the stem (11) of the pillar and being operated by means of a knob (29) associated with a second end of the pillar (12), remote from the first end.
2. A support according to Claim 1 in which spirit-level means (22) are associated with the plate (17).
3. A support according to Claim 1 or Claim 2 in which fixing means (20) for a head (T) for the orientable support of the apparatus are associated with the plate (17).
4. A support according to one or more of the preceding claims in which the fixing means comprise at least one screw coupling which can clamp the head (T) or apparatus against the fixing plate (17) and at least one grub screw (21) which can preload the screw coupling between the plate (17) and the head (T) or apparatus.
5. A support according to one or more of the preceding claims in which a knob (29) is

- screwed onto the tie rod (23) by operative actuation of the knob (29).
6. A support according to claim 5 in which the knob (29) is associated removably with the tie rod (23) in order to be removed for the purpose of the removal of the pillar (12) from the seat in the spider (3) and its insertion therein.
 7. A support according to one or more of the preceding claims in which a small plate (34), removable with the knob (29), is interposed between the knob (29) and the pillar (12) and can project radially from the pillar (12) in order to prevent the pillar from accidentally slipping out of the seat.
 8. A support according to Claim 7 in which the small plate (34) is fixed firmly to the female thread (28) of the knob.
 9. A support according to one or more of the preceding claims in which preloading means are provided on the tie rod for ensuring the tie rod in the first ball and socket joint when the tie rod is slackened.
 10. A tripod including a support according to one or more of the preceding claims in which locking means being provided between the spider (3) and the pillar (12) for locking the pillar (12) in the seat (4), in an adjustable position along the stem (11).
 11. A tripod according to Claim 10 in which the locking means comprise a brake (35) mounted in the spider (3).
 12. A tripod according to Claim 10 or Claim 11 in which the shape of the stem (11) of the pillar (12) and of the seat (4) in the spider (3) is such as to provide a non-rotatable guided coupling of the pillar in the spider.